

PRELIMINARY STAFF SUMMARY OF INFORMATION



Ludington Building

1104 S. Wabash Ave.

Submitted to the Commission on Chicago Landmarks in December 1986
Recommended to the City Council on December 11, 1987



CITY OF CHICAGO
Richard M. Daley, Mayor

Department of Planning and Development
J.F. Boyle, Jr., Commissioner



COVER: The Ludington Building, designed by William Le Baron Jenney, embodies all of the distinguishing characteristics of the early commercial skyscraper—an architectural type developed and perfected in Chicago during the 1880s and 1890s, of which many consider Jenney to be the founder.

RIGHT: The building's terra cotta was designed as a minimal cladding of the steel frame, which served both to ornament the basic form of the supporting structure and fireproof it.

The Commission on Chicago Landmarks, whose nine members are appointed by the Mayor, was established in 1968 by city ordinance. It is responsible for recommending to the City Council that individual buildings, sites, objects, or entire districts be designated as Chicago Landmarks, which protects them by law.

Recommendations concerning specific landmarks are sent to the City Council following an extensive staff study, such as the one summarized in this report. The boundaries and "critical features" of a landmark are identified in the designation ordinance approved by the City Council.

LUDINGTON BUILDING

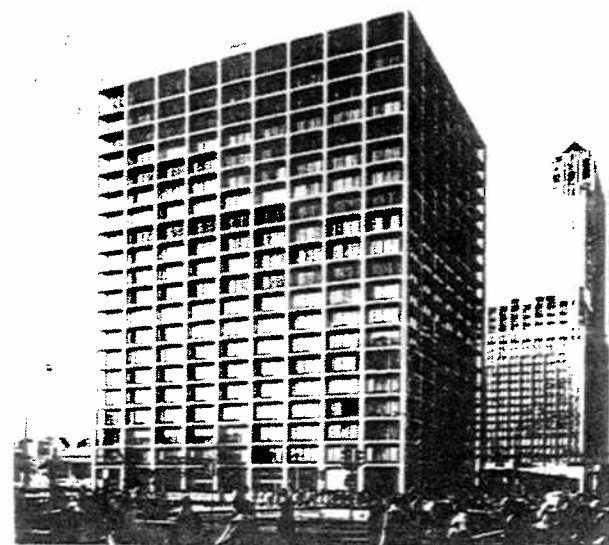
1104 S. Wabash Ave.

(1891; William Le Baron Jenney, architect)

The LUDINGTON BUILDING is the city's earliest, surviving all-steel frame building, a type of construction that changed architecture. It also represents one of the high points of its designer, William Le Baron Jenney, who is considered to be the "father of the skyscraper."

As one of the first structures to be completely clad in terra cotta, it marks an important step in Chicago's leadership in the development of the architectural terra cotta industry. Its purity of form and delicacy of ornamental detail mark it as one of the most significant visual landmarks of the South Loop.

Significant Features: The designation specifies "the street facades on Wabash Avenue and 11th Street and the one-bay return on the alley elevation. This includes the terra-cotta exterior cladding, and the relationship of the window openings and window configurations to the exterior masonry envelope."



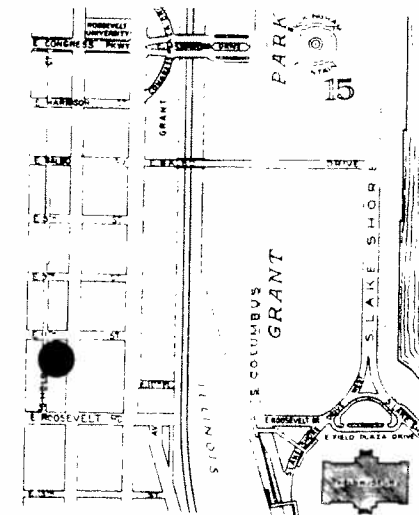
In the early stages of the development of the skyscraper (top, the Home Insurance Building, 1885), architects covered up the skeleton with masonry to make the building appear "more sturdy." The next generation (middle, as epitomized by the Ludington) replaced those elements with lighter materials and pared down ornament, thus better revealing the steel skeleton, and prefiguring the modern skyscraper (bottom, Hartford Insurance Company, 1961).

LUDINGTON BUILDING

1104 S. Wabash Ave.

Architect: William Le Baron Jenney

Date: 1891



The Ludington Building is significant as possibly the masterpiece of William Le Baron Jenney's commercial work. It is a testament to his consummate skill as an engineer and evidence of his aesthetic ability as an architect. The Ludington Building has even greater importance as one of the few remaining and relatively unchanged examples of the early buildings of the Chicago school of architecture, of which many consider Jenney to be the founding father.

The Ludington Building

First mention of plans for the Ludington Building are found in the 1891 *Industrial Chicago: The Building Interests* which reported:

The Ludington estate decided to erect a great building on the southwest corner of Wabash avenue and Harmon court, at a cost of \$200,000 to \$250,000, in August, 1891. The ground is owned by this estate, and is now occupied by several three-story frame buildings. It has a frontage of one hundred and twenty feet on Wabash avenue and one hundred and sixty five feet on Harmon court, and will be fully covered by the new structure. The details of this new improvement are in the hands of Charles J. Barnes, the managing director of the American Book Company.

The Ludington Building was constructed to house the American Book Company at a time when Chicago was in the forefront nationally of the printing and publishing industry. Along with grain, lumber, livestock and meatpacking, contributing to Chicago's signal economic success during the years 1871 to 1893 were manufacturing and merchandising. Within this arena, the industries of printing and publishing were major factors.

The design of the Ludington Building represents what can be considered the finest unity of technological achievement and artistic expression of the skyscraper produced by the Jenney and Mundie office, and it compares favorably with the best contemporary works produced by Adler and Sullivan, Burnham and Root, Holabird and Roche, and other architects and designers associated with the Chicago school of architecture. The structural frame was entirely of steel, unlike many of the earlier skeleton-framed structures which were a hybrid of steel and cast- or wrought-iron members. While it was not the first all-steel frame to be erected, it was among the earliest to be so constructed and is probably the earliest example still standing today. The supporting steel frame represented the most advanced technological achievements of the time, incorporating "Z-bar" columns, a structural shape contemporaneously developed by engineer Charles L. Strobel and consisting of a steel plate to which were riveted four steel Z-angles. The Z-bar column was considered to be one of the most advantageous structural sections to be developed for high-rise skeletal construction due to its strength, ease of fabrication, and its versatility for efficient girder connections and column splices. Principal girders were fabricated of riveted plates and angles. The versatility of metal frame construction was utilized to maximum advantage in the Ludington Building, intended for light industrial use, specifically the publishing and printing trades. The framework allowed the interiors to be free of bearing interior walls, allowing tenants to arrange each floor as unpartitioned loft space or to be subdivided in any required manner. Floor slabs were of hollow terra-cotta tile carried by the metal framework, and all exposed elements of the metal frame were encased on the inside as well as on the exterior with protective fireproofing, rendering the interiors virtually fireproof, an important consideration for buildings of this type. The versatility of the metal frame was also demonstrated in the ability to combine varied floor load capacities within a uniform framework through uncomplicated modifications in the basic structural system. Consequently, the portions of the Ludington Building interior intended for presses or book warehousing were given heavier floor load capacities than those intended for general tenant use. Another demonstration of the advantages of metal frame construction was the capacity of the Ludington Building to be doubled in height if required in the future, without any modification or change to the structural integrity of the original structure.

Free of inappropriate forms and characteristics carried over from masonry construction, the street facades of the Ludington were treated as a delicate skin covering the framework, frankly yet artistically expressing the slender geometric grid of the supporting frame within. The exterior expression of the street facades also reflected the nature of the spaces within, with the ground floor incorporating broad panes of plate glass for the street-front stores and a central ornamental entry, while the upper stories reflected the floor upon floor repetition of the rental spaces with identical modular double window fenestration. Wall surfaces were reduced to a minimum, opening up the facade to maximum glass areas, allowing a maximum of critical natural sunlight to enter the interiors.

The Ludington Building was one of the first structures to have facades completely clad in terra cotta and marks an important step in Chicago's leadership in the development of the architectural terra-cotta industry. The perfection of the manufacturing processes of terra cotta in the late nineteenth century made the material relatively inexpensive and well suited as a lightweight, finely jointed cladding material to cover and protect the exteriors of metal-framed buildings. Since it was a moldable material, the possibility for artistic expression was endless. Produced by the Northwestern Terra Cotta Company

of Chicago, the terra-cotta street facades of the Ludington Building were designed by the office of Jenney and Mundie as a minimal cladding of the steel frame, artistically enhanced by subtle variations in the wall planes and classically derived ornamental detail, yet subordinated to the basic form of the supporting structure.

In an article, "An Age of Steel and Clay," published in *Inland Architect* in 1890, Jenney acknowledged the interrelationship of the technologies of the two materials in the development of architecture of the time, stating:

With cheap steel of a very superior quality and a light, dull glazed terra cotta and a strong, light fireproofing, we are ready to build as never before - light, strong, and at a reasonable price within the reach of every one who can afford to build at all; we have entered upon a new age - an age of steel and clay.

Compared to other buildings of 1891 such as Burnham and Root's Ashland Block (demolished) or Holabird and Roche's Pontiac Building at 542 South Dearborn Street, the Ludington Building is amazingly light. All extraneous masonry and terra cotta have been pared away, prefiguring in a very embryonic form the purity of the glass box.

The Architect William Le Baron Jenney

Born in 1832 and dying in 1907, Jenney's life almost exactly spanned the Victorian age. His early education, his personality as a mature adult, his philosophy as expressed in his prolific writings, and his architectural achievements in retrospect can be seen as quintessentially nineteenth century. He was born on September 25th in Fairhaven, Massachusetts, to a family which belonged to the local mercantile aristocracy due to their owning and operating a thriving fleet of whaling ships. He received his secondary education at the elite Phillips Academy in Andover, Massachusetts, and in 1850 he entered the Lawrence Scientific School at Harvard University. Before this, however, Jenney had spent the years 1846-49 on an extended sea voyage traveling to Chile, California, Hawaii, and the Philippines. It was in the latter islands that the native method of light bamboo construction for strong and storm-resistant homes made an indelible impression on Jenney and would later lead to his early enthusiasm for iron-framed rather than traditional masonry bearing-wall structures. Another early and profound influence on Jenney was simply the built environment of his New England background. The clipper ship, the textile mill, and the truss bridge all embodied a functionalist practicality that Jenney would later adopt and develop as one of the governing principles of his own architecture.

Disenchanted by the inadequacies of the engineering course at Harvard, Jenney decided to continue his education abroad. Although England was the cradle of the Industrial Revolution, it was in France that the best civil engineering education was to be obtained. The profession of civil engineer had its origins in the military engineer, and a system of technical training had been developed during the eighteenth century. The most famous school was the Ecole Polytechnique. However, this was closed to Jenney as it was largely restricted to Frenchmen destined for either the civil or military service. Accordingly, in 1853, Jenney enrolled in the equally well-regarded Ecole Centrale des Arts et Manufactures whose illustrious graduates included Gustave Eiffel. Jenney himself graduated with honors in 1856. The curriculum, which was predominantly a practical and applied engineering program, did include a number of architectural courses. This course of instruction, which treated structure and design as interrelated, would have obvious repercussions in Jenney's later career.

This European educational experience was crucial to Jenney. He absorbed a philosophy which first of all advocated economy, simplicity, and structural awareness and theorized that aesthetic beauty would naturally result once practical considerations were rationally satisfied. More importantly, Jenney learned a working methodology to implement and realize this outlook.

In 1867, Jenney came to Chicago and in 1868 opened an independent architectural practice. One of his first important assignments came in 1869 when he was appointed chief engineer by the West Chicago Park Commissioners. In this capacity he was instrumental in planning the three major parks -- Douglas, Humboldt, Garfield -- of the West Parks and boulevard system. Except for a brief intermission in 1876 when he taught at the University of Michigan, he devoted his entire career to his architectural practice, adding William Mundie as a partner in 1891 and Elmer Jensen in 1905. He retired to Los Angeles in 1905 and died in that city two years later.

While Jenney also designed religious, residential, public and collegiate structures, it is for his commercial buildings that he is remembered and lauded. His most famous building was the Home Insurance Building of 1884-85 which stood at the northeast corner of Adams and LaSalle streets. The notoriety of the Home Insurance Building stems from the fact that many regarded it as the first true skyscraper because of its almost complete reliance on steel framing for support, a truly revolutionary and innovative building technology.

For generations scholars have hotly debated and discussed whether or not the Home Insurance Building truly deserves the accolade of first skyscraper. The final verdict is that this was an important and seminal step in an evolutionary process, but neither it nor indeed

any building can really be certified as the absolutely first skyscraper as a number of architects in both Chicago and New York were simultaneously involved in the development of steel frame construction between 1882 and 1889. Following the completion of the Home Insurance Building in 1886, Jenney's firm received numerous commissions for other early metal-framed highrise structures. While Jenney's office was able to embrace and develop the technologies of metal frame construction, they shared a basic design problem with other architects of the time as to how to aesthetically express buildings of this novel type. In the early developmental stages, the design of the facades did not address the full potential or logical expression of the slender, grid-like skeleton, following instead the architectural grammar of traditional bearing masonry construction. Building height was frequently disguised rather than emphasized, with facades broken up horizontally by differences in fenestration and detail to visually diminish the height of the structure.

The creation of forms appropriate for the expression of the tall building finally caught up with and kept pace with the technological advances of metal frame construction in the 1890s, affecting not only the work of the architects of Chicago but across the nation as well. Jenney's office, which had pioneered in the technological aspects of metal frame construction in the previous decade, now began sophisticated experiments into artistic expression as evidenced by marked changes in the facades of many of their buildings executed in the early 1890s. Among the earliest evidence of this change was the design created in 1890 for the Fair Store in Chicago (demolished) in which the facade clearly expressed the outline of the supporting skeleton without implying, by exaggerating the width of the cladding, that masonry was supporting the structure. Instead, the exterior was treated as a straightforward covering of the supporting skeleton, although it was still broken up into varied horizontal divisions with heavy classical detail which somewhat obscured the visual height and overall unity of the composition.

Jenney's contribution to American architecture extended far beyond his practice. He wrote a number of important technical papers for *Inland Architect* magazine, and a series of his lectures on the history of architecture were published in that same journal in 1883 and 1884. Most significant and impressive are the number of young architects whose later outstanding careers were launched by the training they received in Jenney's office. The list of names includes giants in the annals of architectural history, most significantly Louis H. Sullivan, William Holabird, Martin Roche, and Daniel Burnham. In *The Chicago School of Architecture* (1964), architectural historian Carl Condit gives a reading on the character of William Le Baron Jenney and his impact on his times:

Jenney was perhaps the most original structural talent of the Chicago school, but at the same time he was least conscious of the aesthetic problem fixed by his new constructions. He belonged to that type of American genius of which John A. Roebling and James B. Eads were leading representatives. A creative builder of the front rank, willing to break with precedent when he recognized the need, he was so imbued with the ruling pragmatic spirit of the market place that he was largely unaware of the aesthetic implications of what he had achieved. As an

engineer he had that kind of easy confidence in his ability that seldom led to self-questioning or to theoretical considerations. But Jenney knew what he was doing, and it had to be done before others could move on to greater heights.

The Ludington Estate

The financial backing that made the Ludington Building possible came from the estate of Nelson Ludington, a pioneering entrepreneur who made a considerable fortune in lumber.

Born in New York state on January 18, 1818, to a family with pre-Revolutionary roots in the New World, Ludington started as a clerk in a dry goods store. In 1839, young Ludington moved to Milwaukee to work in his Uncle Lewis's general store, later acquiring a share in the business himself. In 1848 he sold his interest in this store and formed a partnership with Daniel Wells, Jr., and Jefferson Sinclair to found a lumber business. The new company was called N. Ludington and Company. Extensive timber lands were acquired and mills for the manufacture of lumber were established at Escanaba and Marinette, Michigan. In 1854, the headquarters of this flourishing concern were moved from Milwaukee to Chicago. In 1868, the firm was incorporated as the N. Ludington Company with Nelson Ludington as President until his death in 1883. A shrewd financier as well as a resourceful businessman, Ludington was a director and later president of the Fifth National Bank of Chicago.

Ludington was survived by his wife and two daughters, and it was his daughter Mary who commissioned the Ludington Building to house the American Book Company of which her husband, Charles Barnes, was then president. Born in 1836, Barnes came to Chicago in 1868 to manage a branch of A.S. Barnes and Company which later combined with other school book publishers to form the American Book Company. Eventually becoming Chairman of the Board, Charles Barnes retired in 1910 and lived the rest of his life abroad, dying in Switzerland in 1921.

Criteria for Designation

The following criteria, as set forth in Section 2-120-620 of the Municipal Code of the City of Chicago, were considered by the Commission on Chicago Landmarks in determining that the Ludington Building should be recommended for landmark designation.

CRITERION 1: *Its value as an example of the architectural, cultural, economic, historic, social, or other aspect of the heritage of the City of Chicago, State of Illinois, or the United States.*

The Ludington Building exemplifies the economic heritage of the City of Chicago. The financing for the construction of the building came directly from the vast personal fortune accumulated by Nelson Ludington in the lumber business. The building was commissioned by Ludington's daughter Mary, to house the American Book Company which was headed by her husband, Charles J. Barnes. The printing and publishing industries, like lumber, were major factors in Chicago's signal economic success during the dynamic growth years 1871-1893.

CRITERION 3: *Its identification with a person or persons who significantly contributed to the architectural, cultural, economic, historic, social, or other aspect of the development of the City of Chicago, State of Illinois, or the United States.*

The Ludington Building is named after the notable businessman, Nelson Ludington, one of Chicago's pioneering entrepreneurs who made an important contribution to the growth and development of the city's lumber industry.

It was designed by William Le Baron Jenney, the architect and engineer who played a major role in the development of the modern, steel-framed skyscraper and whom many acclaim as the founding father of the internationally-known Chicago school of architecture.

CRITERION 4: *Its exemplification of an architectural type or style distinguished by innovation, rarity, uniqueness, or overall quality of design, detail, materials, or craftsmanship.*

The Ludington Building embodies all the distinguishing characteristics of the early commercial skyscraper, an architectural type now universally acknowledged to have been primarily developed and artistically perfected in Chicago during the 1880s and 1890s. Salient points include the simple and direct expression of the cage-like reality of steel-skeleton construction; balanced treatment of horizontal spandrel and vertical pier elements; use of terra cotta as a sheathing material; and limited and sparing use of ornament.

While the Ludington Building was not the first all-steel frame to be erected, it was among the earliest to be constructed and it is probably the earliest example still standing today. The supporting steel frame represented the most advanced technological achievements of the time, incorporating "Z-bar" columns, a structural shape contemporaneously developed by engineer Charles L. Strobel. Further, the Ludington Building was one of the first structures to have facades completely clad in terra cotta and marks an important step in Chicago's leadership in the development of the architectural terra cotta industry.

CRITERION 5: *Its identification as the work of an architect, designer, engineer, or builder whose individual work is significant in the history or development of the City of Chicago, the State of Illinois, or the United States.*

William Le Baron Jenney is credited with founding what has come to be known historically as the Chicago school of architecture. As an engineer he made critical advances in the building technology which led eventually to the steel skeleton modern skyscraper. At the same time he made important strides in creating a valid artistic expression in this new commercial aesthetic. He also was among the first park and urban planner in the United States. Lastly, his role as a teacher and mentor was almost as important as anything he achieved as an individual as his office provided the training ground for later leading figures such as Louis Sullivan, Daniel Burnham, and Holabird and Roche.

Significant Historical and Architectural Features

Based on its evaluation of the Ludington Building, the staff recommends that the significant features be identified as the street facades on Wabash Avenue and 11th Street, and the one-bay return on the alley elevation. This includes the terra-cotta exterior cladding, and the relationship of the window openings and window configurations to the exterior masonry envelope.

Acknowledgments

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The Inland Architect and News Record, 1891

(inside back cover)

Siegel, Arthur, *Chicago's Famous Buildings*, 1965

(facing page to report, bottom)

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(facing page to report, top)

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(cover; inside front cover; facing page to report, middle)



This report was originally prepared in December 1986.
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This 1891 illustration highlights the contrast between the Ludington Building (with wall surfaces reduced to a minimum and windows to a maximum) and its neighboring buildings which typified the architecture of that time (traditional masonry, load-bearing walls which could not accommodate large windows).

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